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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,195	04/29/1999	ROGER E. MAROHART	26046/04000	6586

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EXAMINER

TELLER, ROY R

ART UNIT PAPER NUMBER

1654

DATE MAILED: 03/21/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/302,195	MAROHART ET AL.	
	Examiner	Art Unit	
	Roy Teller	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 and 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>13</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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### **DETAILED ACTION**

This office action is in response to Paper No: 8, received 4/ 12/01, in which group I, claims 1-8 and 13-15 were elected without traverse. Amendment of the claims to delete non-elected subject matter is required prior to allowance.

Claims 1-8 and 13-15 will be examined.

#### ***Claim Objections***

The specification and claims are objected to for failing to adhere to the requirements of the sequence rules. Applicant must append SEQ ID Nos. to all mentions of specific sequences in the specification and claims. See 37 CFR 1.821(d).

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one

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skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 13 recite "... combinations thereof..." without setting forth the structure of the combinations.

The Court of Appeals for the Federal Circuit has recently held that a "written description of an invention involving a chemical genus, like a description of a chemical species, "requires a precise definition, such as by structure, formula [or] chemical name', of the claimed subject matter sufficient to distinguish it from other materials" *University of California v. Eli Lilly and Co.*, 1997 U.S. App. LEXIS 18221, at \*23, quoting *Fiers v. Revel*, 25 USPQ 1601, 1606 (Fed. Cir. 1993) (background material in original). To fully describe a genus of genetic material, which is a chemical compound, applicants must (1) fully describe at least one species of the claimed genus sufficient to represent said genus whereby a skilled artisan, in view of the prior art, could predict the structure of other species encompassed by the claimed genus and (2) identify the common characteristics of the claims molecules, e.g., structure, physical and/or chemical characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or a combination of these.

The instant specification recites: "...the hydrophobic side chains comprise an alkyl group...the alkyl groups are linked to the polymeric backbone through ester linkages, secondary amine linkages, or, preferably, amide linkages." See page 2, lines 25-31. The instant specification also recites: "...the hydrophilic side chains are linked to the polymeric backbone through ester linkages, secondary amine linkages, or, preferably, amide linkages." See page 3, lines 4-5. Combinations of the aforementioned linkages is not defined.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 13 recite "... or combinations thereof...", this is indefinite for failing to set forth the metes and bounds of the combinations envisioned.

Claims 2-8 and 14-15 are included in this rejection for depending upon a rejected claim.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiu (Macromolecules, 1998, vol. 31, pp. 165-171) in view of Drumheller (USPN 5,897,955).

The claimed invention is drawn to a substrate having a surfactant polymer attached to a surface. The surfactant polymer comprises: a) a polymeric backbone of repeating monomeric units, b) a plurality of hydrophobic side chains comprising from about 2 to about 18 methylene

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groups, linked to the polymeric backbone by ester linkages, secondary amine linkages or amide linkages and c) a plurality of hydrophilic side chains linked to the polymeric backbone by ester linkages, secondary amine linkages or amide linkages, the hydrophilic side chains selected from the group consisting of : neutral oligosaccharide side chains having a weight average molecular weight of 7000; charged oligosaccharide side chains having a weight average molecular weight of less than 10,000; an oligopeptide of from about 3 to 30 amino acid residues, the oligopeptide having an amino acid sequence which interacts with protein receptors on the surface of cells.

Qiu teaches a surfactant polymer derived from poly (vinylamine), page 165, column 2. Qiu discloses the poly (vinylamine) with either hydrophilic dextran or hydrophobic alkanoyl groups, page 168, column 2. Qiu teaches the synthetic approach provides a route to prepare a variety of surfactant polymers with well-defined structures and hydrophilic/hydrophobic balances, see abstract. Qiu does not teach the use of oligopeptides in the surfactant polymer.

Drumheller teaches support members having surfaces that are rendered hydrophilic for use as a substrate for the immobilization of bioactive species, see abstract. Drumheller teaches materials and methods for the immobilization of bioactive species onto polymeric substrates, column 1, lines 13-14. Drumheller disclose that peptides may be utilized to prepare an ligand affinity, see column 8, lines 66-67. Drumheller teaches the use of polyvinyl alcohol and poly-lysine as a polymeric support member, see column 11, line 61 and column 12, line 1. Drumheller discloses a polymer poly vinyl alcohol support was immersed in a buffered solution of Gly-Arg-Gly-Asp-Ser to allow conjugation of the peptide onto the support, column 23, lines 4 and 6. Drumheller teaches the ligand, Gly-Arg-Gly-Asp-Ser, is known to bind to receptors on cells involved in adhesion of the cell to other cells, or other substrates, see column 24, lines 12-13.

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Drumheller discloses a ligand, Arg-Gly-Asp that is used to immobilize rat insulinoma cells, see column 24, lines 16-17.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have added the peptide of Drumheller to the surfactant polymer of Qiu in order to enhance adhesive and nonadhesive interactions. Qiu teaches the inhibition of protein adsorption from the perspective of how the body controls adhesive and nonadhesive interactions.

### ***Conclusion***

All claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy Teller whose telephone number is (703) 305-4243. The examiner can normally be reached on Monday-Friday from 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (703) 306-3220. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

RT  
1654  
3/14/03

RT

*Brenda Brumback*  
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